

Consolidated* **11000** Series

Safety Relief Valve



| Contents | Page |
|-------------------------------------|-------------|
| Conversion Table | 1 |
| Scope of Design | 2 |
| Parts | 3 |
| Materials of Construction | 4 |
| Dimensions and Weights..... | 5 |
| Pressure/Temperature | 6 |
| X-Ring Selection Guide..... | 7 |
| General X-Ring Recommendations..... | 7 |
| Capacity Chart..... | 8 |
| Spring Chart..... | 9 |
| Valve Coding..... | 10 |

Conversion Table

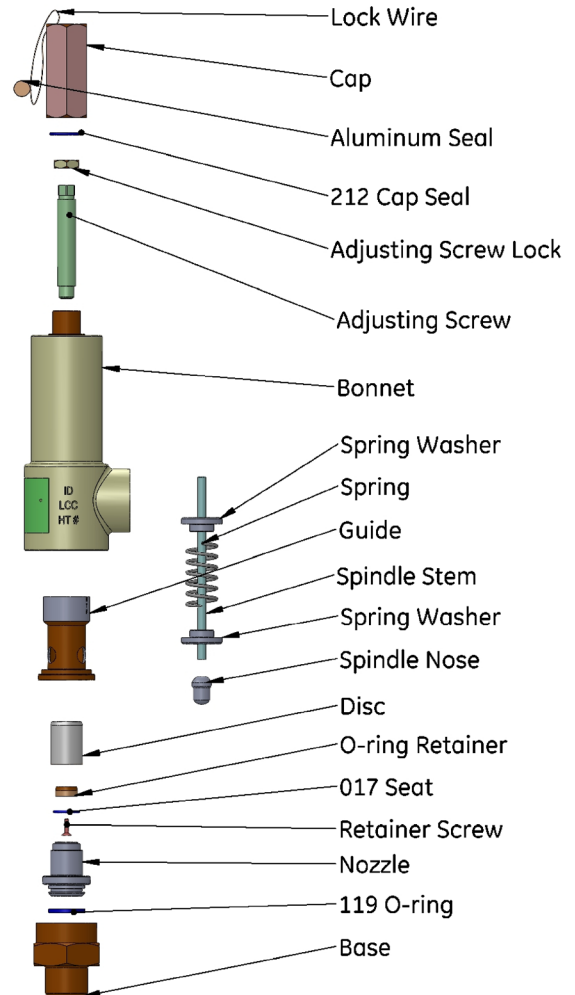
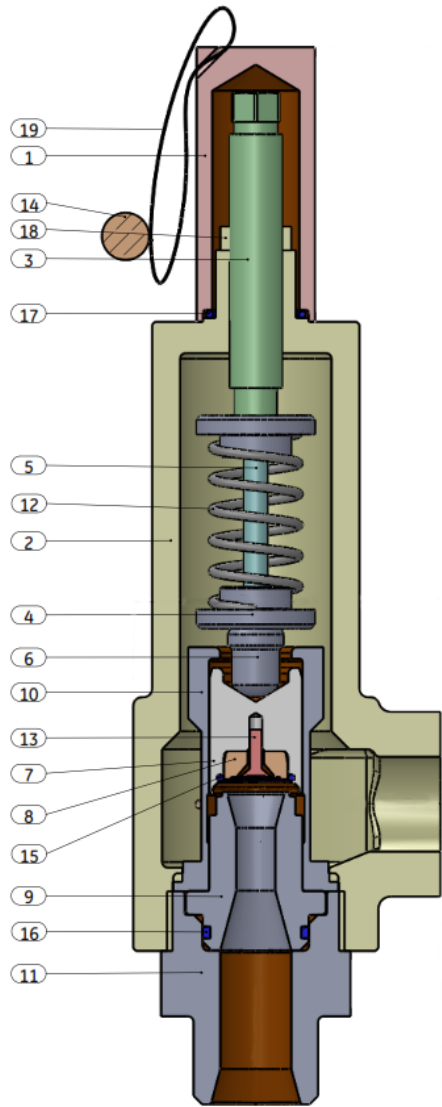
| All the USCS values are converted to metric values using the following conversion factors: | | |
|--|-------------------|---------------------|
| USCS Unit | Conversion Factor | Metric Unit |
| in. | 25.4 | mm |
| lb. | 0.4535924 | kg |
| in ² | 6.4516 | cm ² |
| ft ³ /min | 0.02831685 | m ³ /min |
| gal/min | 3.785412 | L/min |
| lb/hr | 0.4535924 | kg/hr |
| psig | 0.06894757 | barg |
| ft lb | 1.3558181 | Nm |
| °F | 5/9 (°F-32) | °C |

Scope of Design

GE's Consolidated 11000 Series Safety Relief Valve is a certified ASME Section VIII, Division 1 valve designed for upstream and midstream oil and gas applications.

| 11000 SRV Product Scope D orifice Gas (.132 in.) | | | |
|---|----------------------|----------------------------|----------------------------|
| Inlet MNPT (in.) | Outlet FNPT (in.) | Min Set Pressure (psig) | Max Set Pressure (psig) |
| 0.75 | 1 | 75 | 2000 |
| 1 | 1 | 75 | 2000 |
| E orifice Gas (.246 in.) | | | |
| Inlet MNPT (in.) | Outlet FNPT (in.) | Min Set Pressure (psig) | Max Set Pressure (psig) |
| 0.75 | 1 | 75 | 2000 |
| 1 | 1 | 75 | 2000 |
| E orifice liquid (.246 in.) | | | |
| Inlet MNPT (in.) | Outlet FNPT (in.) | Min Set Pressure (psig) | Max Set Pressure (psig) |
| 0.75 | 1 | 75 | 1505 |
| 1 | 1 | 75 | 1505 |

Parts



Materials of Construction

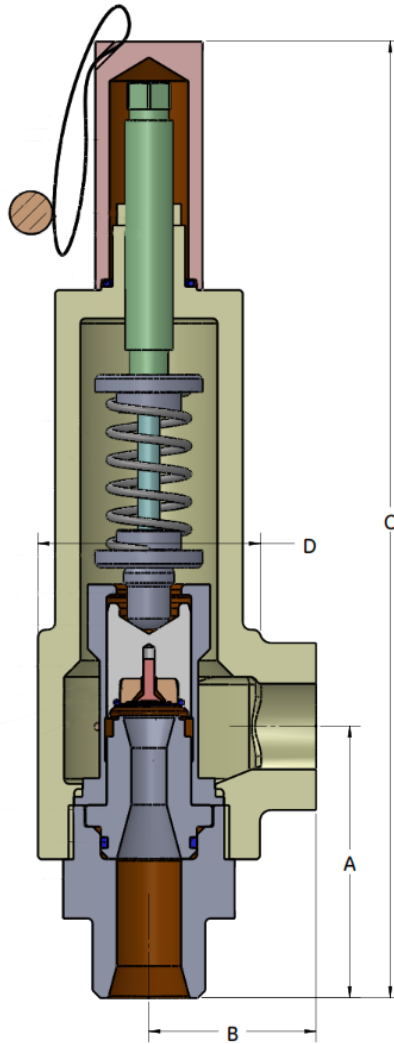
| Item No. | Part Description | CC Carbon Steel | S4 Stainless Steel | N1 Carbon Steel NACE | N2 Stainless Steel NACE |
|----------|------------------------------------|--|--|--|--|
| 1 | Cap 11132/246 | ASME SA105 | SA479 TYPE 316/316L | ASME SA105 | SA479 TYPE 316/316L |
| 2 | Bonnet 11132/246 | ASME SA216 GR. WCC | ASME SA351 GR. CF8M | ASME SA216 GR. WCC | ASME SA351 GR. CF8M |
| 3 | Adjusting screw 11132/246 | ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL | ASME SA479 TYPE 316/316L | ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL | ASME SA479 TYPE 316/316L |
| 4 | Spring washer 11132/246 | ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL | ASME SA479 TYPE 316/316L | ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL | ASME SA479 TYPE 316/316L |
| 5 | Spindle stem 11132/246 | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L |
| 6 | Spindle nose 11132/246 | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L |
| 7 | Disc 11132/246 | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L |
| 8 | X-ring retainer 11132/246 | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L |
| 9 | Nozzle 1" 11132/246 | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L |
| 10 | Guide 11132/246 | ASME SA351 GR. CF8M | ASME SA351 GR. CF8M | ASME SA351 GR. CF8M | ASME SA351 GR. CF8M |
| 11 | Base 11132/246 | ASME SA105 | ASME SA479 TYPE 316/316L | ASME SA105 | ASME SA479 TYPE 316/316L |
| 12 | Spring | 316 or 17-7SSST | 316 or 17-7SSST | Inconel | Inconel |
| 13 | Retainer Screw 11132/246 | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L | ASME SA479 TYPE 316/316L |
| 19 | Sealing wire | 18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304) | 18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304) | 18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304) | 18-8 STAINLESS STEEL (AISI 301, 302, 303 OR 304) |
| 14 | Aluminum Seal | ALLOY 1350 | ALLOY 1350 | ALLOY 1350 | ALLOY 1350 |
| | Nameplate | STAINLESS STEEL | STAINLESS STEEL | STAINLESS STEEL | STAINLESS STEEL |
| | Metal Tack | STEEL-COPPER NICKEL PLATED | STEEL-COPPER NICKEL PLATED | STEEL-COPPER NICKEL PLATED | STEEL-COPPER NICKEL PLATED |
| 16 | Inlet Seal, Size 119 | ELASTOMER ¹ | ELASTOMER ¹ | ELASTOMER ¹ | ELASTOMER ¹ |
| 17 | Cap Seal, Size 212 | ELASTOMER ¹ | ELASTOMER ¹ | ELASTOMER ¹ | ELASTOMER ¹ |
| 15 | Seat, Size 017 | ELASTOMER ¹ | ELASTOMER ¹ | ELASTOMER ¹ | ELASTOMER ¹ |
| | Adjusting Screw Lock Nut 11132/246 | ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL | ASME SA479 TYPE 316/316L | ASTM A108 GR. 1018, 1019 OR 1020 CARBON STEEL | ASME SA479 TYPE 316/316L |

¹Buna-N (Nitrile) is standard; additional options available on request

Note: The seat seal uses an X-ring.

The Inlet Seal and Cap Seal use an O-ring.

Dimensions & Weights



| 11000 Series SRV (USCS) | | | | | | | | | | |
|-------------------------|----------------|----------------------|---------------------|-----------|------------|--------|-------|----------|--------|-------------------|
| Size In. | Type | Orifice Area Sq. In. | Pressure Range psig | Inlet In. | Outlet In. | A In. | B In. | C In. | D In. | Approx Weight lb. |
| 3/4 | 11132 11246 | 0.132 0.246 | 75-1040 | 0.5 MNPT | 1 FNPT | 3-5/16 | 2 | 11-5/6 | 2-9/16 | 7.7 |
| | | | >1040 | | | | | 12-3/16 | | 7.7 |
| 1 | 11132 11246 | 0.132 0.246 | 75-1040 | 1 MNPT | | | | 11-5/16 | | 7.9 |
| | | | >1040 | | | | | 12-13/16 | | 7.9 |

| 11000 Series SRV (METRIC) | | | | | | | | | | |
|---------------------------|----------------|-------------------------|---------------------|----------|-----------|------|------|------|------|-------------------|
| Size mm | Type | Orifice Area Sq. sq. mm | Pressure Range barg | Inlet mm | Outlet mm | A mm | B mm | C mm | D mm | Approx Weight kg. |
| 19 | 11132 11246 | 85 159 | 5-72 | 19 | 25 | 84 | 50 | 287 | 65 | 3.5 |
| | | | >72 | | | | | 310 | | 3.5 |
| 25 | 11132 11246 | 85 159 | 5-72 | 25 | | | | 287 | | 3.6 |
| | | | >72 | | | | | 310 | | 3.6 |

Pressure/Temperature

| 11000 Series - Pressure/Temperature Psig | | | | | | | |
|--|---------------|------------|------|------|------|------|------|
| Temperature (°F) | | -20 to 100 | 200 | 300 | 400 | 500 | 600 |
| Material Class | Base Material | psig | | | | | |
| CC | SA105 | 2000 | 1834 | 1770 | 1711 | 1630 | 1536 |
| S4 | 316/316L | 2000 | 1676 | 1514 | 1387 | 1292 | 1220 |

| 11000 Series - Pressure/Temperature Barg | | | | | | | |
|--|---------------|-----------|-----|-----|-----|-----|-----|
| Temperature (°C) | | -29 to 38 | 93 | 149 | 204 | 260 | 316 |
| Material Class | Base Material | barg | | | | | |
| CC | SA105 | 138 | 127 | 122 | 118 | 112 | 106 |
| S4 | 316/316L | 138 | 116 | 104 | 96 | 89 | 84 |

X-Ring Selection Guide

| Material | Durometer | Description | Temperature Limits | | | |
|------------------------|----------------------|----------------------|--------------------|------|-----------|-----------|
| | | | min. | | max. | |
| | | | °F | °C | °F | °C |
| Nitrile | 50 | N299-50 or N1009-50 | -45 | -42 | 225 | 107 |
| | 70 | N674-70 | -40 | -40 | 250 | 121 |
| | 90 | N552-90 | -40 | -40 | 250 | 121 |
| | 70 ¹ | N1173-70 | -25 | -31 | 300 | 148 |
| Ethylene/ Propylene | 50 | E981-50 | -65 | -53 | 212 | 100 |
| | 70 | E603-70 | -65 | -53 | 212 | 100 |
| | 75 & 80 ² | E740-75 & E515-80 | -70 | -56 | 250 | 121 |
| | 90 | E962-90 ³ | -70 | -56 | 500 | 260 |
| | 75 ⁴ | E962-75 | -60 | -51 | 250 / 400 | 121 / 204 |
| Fluorocarbon | 50 | V986-50 | -15 | -26 | 400 | 204 |
| | 75 | V747-75 or V884-75 | -15 | -26 | 400 | 204 |
| | 90 | V894-90 or V709-90 | -15 | -26 | 400 | 204 |
| Neoprene | 50 | C267-50 | -45 | -42 | 300 | 148 |
| | 70 | C944-70 or C873-70 | -45 | -42 | 300 | 148 |
| Silicone | 50 | S595-50 | -65 | -53 | 437 | 225 |
| | 70 | S604-70 | -65 | -53 | 437 | 225 |
| Teflon | N/A | Teflon | -300 | -184 | 505 | 263 |
| Kalrez ⁵ | 82 | 1050LF | -4 | -20 | 550 | 287 |
| Kalrez ⁵ | 75 | 4079 | -4 | -20 | 600 | 315 |
| Kalrez ⁵ | 91 | 3018 | -4 | -20 | 550 | 287 |
| Kalrez ⁵ | 65 | 1058 | -4 | -20 | 500 | 260 |

General Elastomer Recommendations

| Material | Recommended for | Not Recommended for | Mechanical Properties |
|---------------------------------------|---|--|---|
| Buna-N (Nitrile) | Silicone oils/greases, water, petroleum oils/fuels, ethylene glycol fluids | Ketones (MEK), halogenated hydrocarbons, auto, aircraft brake fluids, strong acids, sunlight, ozone, weathering | Good wear resistance, good compression set resistance, good short-term resilience, good permeation resistance |
| Viton® (Fluorocarbon Type A) | Vacuum, most acids/chemicals, halogenated hydrocarbons, Di-Ester lubricants, petroleum oils/fuels, silicone oils/greases | Ketones (MEK), auto/aircraft brake fluids, amines (ammonia). Acetone, skydrol, ethyl acetate, hot water/steam, low molecular esters and ethers | Good wear resistance, excellent compression set resistance, moderate short-term resilience, excellent permeation resistance |
| EPDM (Ethylene Propylene) | Sunlight, ozone, weathering, hot water/steam, auto/aircraft brake fluids, some acids and bases, ketones, and alcohols, plumbing | Petroleum oils/fuels | Good wear resistance, good compression set resistance, moderate short-term resilience, good permeation resistance |
| Aflas | Bases, sour oil/gas, steam, phosphate esters, amines, petroleum oils, acids, ozone, alcohols | Aromatic fuels, ketones, carbon tetrachloride, ethers, non-polar solvents, acetic acid, organic acetates | Good wear resistance, good compression set resistance, moderate short-term resilience, good permeation resistance |
| Perfluoroelastomer (Chemraz®/Kalrez®) | Low out gassing, chlorine wet/dry, petroleum oil, chlorinated hydrocarbons | Molten metals, gaseous alkali metals, halogenated Feons/fluids, uranium hexafluoride | Good wear resistance, good compression set resistance, moderate short-term resilience, good permeation resistance |

Orifice Capacity Chart

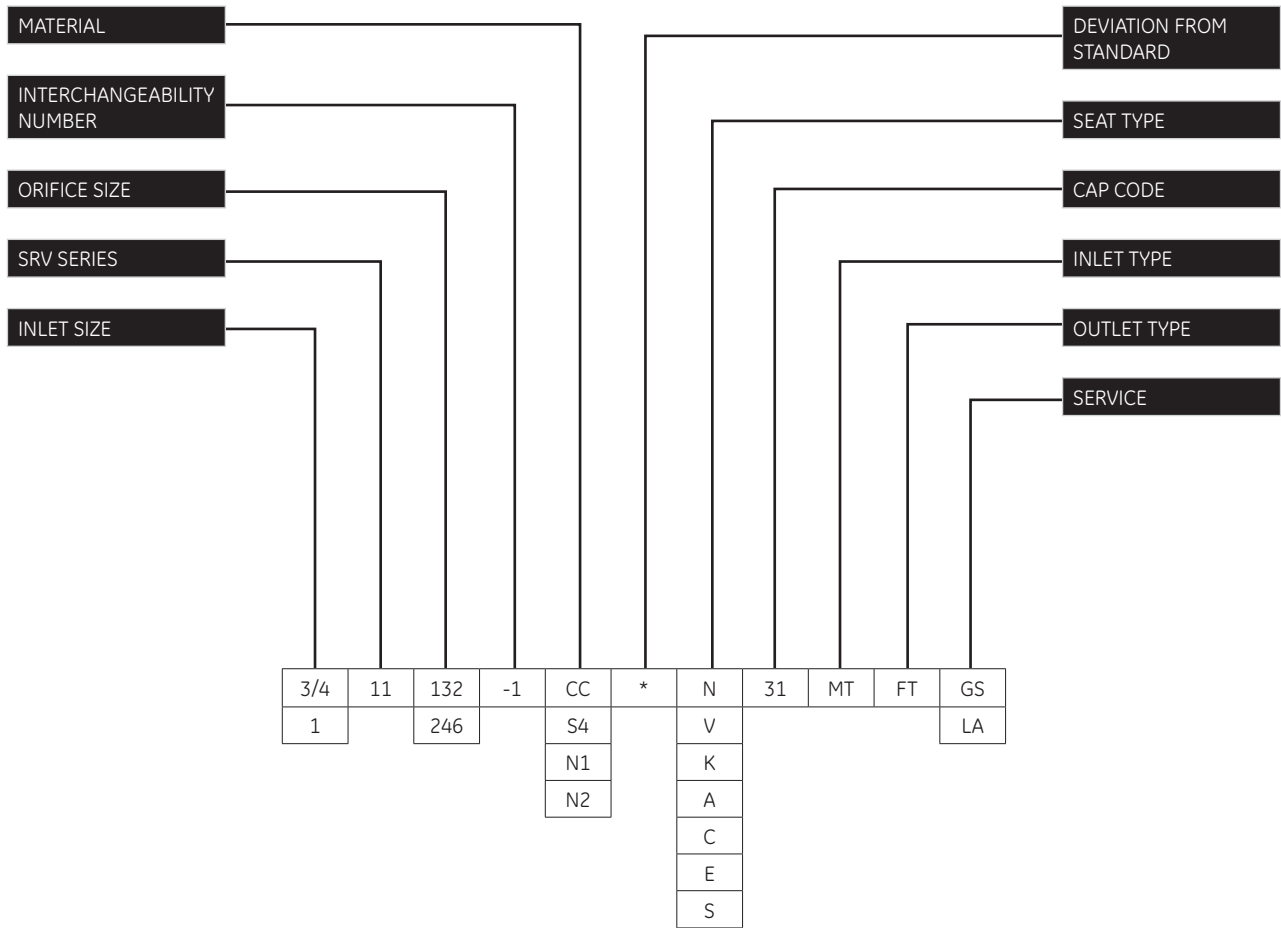
Capacities based on 10% overpressure or 3 psig (0.21 barg), whichever is greater, showing 90% actual capacity.

| Medium Orifice Designation | | Gas/Vapor | | Liquid |
|----------------------------|------|------------------|-----------------|-----------------|
| Orifice Designation | | D | E | E |
| Orifice Area | | in ² | in ² | in ² |
| Set Pressure | | 0.132 | 0.246 | 0.246 |
| Set Pressure | | Orifice Capacity | | |
| psig | barg | SCFM | SCFM | GPM |
| 75 | 5 | 204.1 | 347.0 | 45.1 |
| 100 | 7 | 261.9 | 445.2 | 52.1 |
| 200 | 14 | 492.9 | 837.9 | 73.7 |
| 300 | 21 | 723.9 | 1230.6 | 90.3 |
| 400 | 28 | 954.9 | 1623.3 | 104.3 |
| 500 | 35 | 1185.9 | 2016.0 | 116.6 |
| 600 | 41 | 1416.9 | 2408.7 | 127.7 |
| 700 | 48 | 1647.9 | 2801.4 | 137.9 |
| 800 | 55 | 1878.9 | 3194.1 | 147.4 |
| 900 | 62 | 2109.9 | 3586.8 | 156.4 |
| 1000 | 69 | 2340.9 | 3979.5 | 164.8 |
| 1100 | 76 | 2571.9 | 4372.2 | 172.9 |
| 1200 | 83 | 2802.9 | 4764.9 | 180.6 |
| 1300 | 90 | 3033.9 | 5157.6 | 187.9 |
| 1400 | 97 | 3264.9 | 5550.3 | 195.0 |
| 1500 | 103 | 3495.9 | 5943.0 | 201.9 |
| 1505 | 104 | 3507.4 | 5962.6 | 202.2 |
| 1600 | 110 | 3726.9 | 6335.7 | |
| 1700 | 117 | 3957.9 | 6728.4 | |
| 1800 | 124 | 4188.9 | 7121.1 | |
| 1900 | 131 | 4419.9 | 7513.8 | |
| 2000 | 138 | 4650.9 | 7906.5 | |

Spring Chart

| Spring No. | Rate (lb/in) | Pressure Range (psig) | | Standard Material | Seal Durometer (recommended) | Part No. |
|------------|--------------|-----------------------|------|-------------------|------------------------------|----------|
| | | Low | High | | | |
| 1 | 50 | 75 | 82 | 316 | 70 | W11001SY |
| 2 | 56 | 83 | 96 | 316 | 70 | W11002SY |
| 3 | 65 | 97 | 107 | 316 | 70 | W11003SY |
| 4 | 71 | 108 | 118 | 316 | 70 | W11004SY |
| 5 | 80 | 113 | 133 | 316 | 70 | W11005SY |
| 6 | 89 | 134 | 148 | 316 | 70 | W11006SY |
| 7 | 100 | 149 | 166 | 316 | 70 | W11007SY |
| 8 | 112 | 167 | 186 | 316 | 70 | W11008SY |
| 9 | 125 | 187 | 208 | 316 | 70 | W11009SY |
| 10 | 140 | 209 | 232 | 316 | 70 | W11010SY |
| 11 | 155 | 233 | 250 | 316 | 70 | W11011SY |
| 12 | 163 | 251 | 273 | 316 | 70 | W11012SY |
| 13 | 184 | 274 | 306 | 316 | 70 | W11013SY |
| 14 | 205 | 307 | 342 | 17-7PH | 70 | W11014NC |
| 15 | 230 | 343 | 386 | 17-7PH | 70 | W11015NC |
| 16 | 260 | 387 | 438 | 17-7PH | 70 | W11016NC |
| 17 | 295 | 439 | 494 | 17-7PH | 70 | W11017NC |
| 18 | 333 | 495 | 557 | 17-7PH | 70 | W11018NC |
| 19 | 375 | 558 | 626 | 17-7PH | 90 | W11019NC |
| 20 | 420 | 627 | 713 | 17-7PH | 90 | W11020NC |
| 21 | 480 | 714 | 817 | 17-7PH | 90 | W11021NC |
| 22 | 550 | 818 | 910 | 17-7PH | 90 | W11022NC |
| 23 | 605 | 911 | 1040 | 17-7PH | 90 | W11023NC |
| 24 | 700 | 1041 | 1169 | 17-7PH | 90 | W11024NC |
| 25 | 785 | 1170 | 1374 | 17-7PH | 90 | W11025NC |
| 26 | 925 | 1375 | 1537 | 17-7PH | 90 | W11026NC |
| 27 | 1025 | 1538 | 1620 | 17-7PH | 90 | W11027NC |
| 28 | 1025 | 1621 | 1713 | 17-7PH | 90 | W11028NC |
| 29 | 1150 | 1714 | 1892 | 17-7PH | 90 | W11029NC |
| 30 | 1250 | 1893 | 2000 | 17-7PH | 90 | W11030NC |

Valve Configuration Code



Valve Configuration Code (Contd.)

| Material | |
|-------------|-------------------------|
| Designation | Material |
| CC | Carbon steel (standard) |
| S4 | Stainless Steel |
| N1 | Carbon steel Nace |
| N2 | Stainless steel Nace |

| Orifice Size | |
|--------------|-------|
| Designation | In. |
| 132 | 0.132 |
| 246 | 0.246 |

| Inlet Size | |
|-------------|------|
| Designation | In. |
| 3/4 | 0.75 |
| 1 | 1 |

| Seat Material | |
|---------------|-------------------------|
| Designation | Elastomer |
| N | Buna-Nitrile (standard) |
| V | Viton |
| K | Kalrez |
| A | Aflas |
| C | Chemraz |
| E | EPDM |
| S | Special |

| Cap Design | |
|-------------|-------------|
| Designation | Material |
| 31 | Screwed cap |

| Inlet | |
|-------------|----------|
| Designation | Type |
| MT | Male NPT |

| Outlet | |
|-------------|------------|
| Designation | Type |
| FT | Female NPT |

| Service | |
|-------------|----------|
| Designation | Material |
| GS | Gas |
| LA | Liquid |

DIRECT SALES OFFICE LOCATIONS

| | | |
|---|--|--|
| AUSTRALIA Brisbane: Phone: +61-7-3001-4319 Fax: +61-7-3001-4399 | ITALY Phone: +39-081-7892-111 Fax: +39-081-7892-208 | SOUTH AFRICA Phone: +27-11-452-1550 Fax: +27-11-452-6542 |
| Perth: Phone: +61-8-6595-7018 Fax: +61-8-6595-7299 | JAPAN Tokyo Phone: +81-03-6871-9008 Fax: +81-03-6890-4620 | SOUTH & CENTRAL AMERICA AND THE CARIBBEAN Phone: +55-12-2134-1201 Fax: +55-12-2134-1238 |
| Melbourne: Phone: +61-3-8807-6002 Fax: +61-3-8807-6577 | KOREA Phone: +82-2-2274-0748 Fax: +82-2-2274-0794 | SPAIN Phone: +34-93-652-6430 Fax: +34-93-652-6444 |
| BELGIUM Phone: +32-2-344-0970 Fax: +32-2-344-1123 | MALAYSIA Phone: +60-3-2161-0322 Fax: +60-3-2163-6312 | UNITED ARAB EMIRATES Phone: +971-4-8991-777 Fax: +971-4-8991-778 |
| BRAZIL Phone: +55-19-2104-6900 Fax: +55-11-2146-3610 | MEXICO Phone: +52-55-3640-5060 | UNITED KINGDOM Bracknell Phone: +44-1344-460-500 Fax: +44-1344-460-537 |
| CHINA Phone: +86-10-5689-3600 | THE NETHERLANDS Phone: +31-15-3808666 Fax: +31-18-1641438 | Skelmersdale Phone: +44-1695-526-00 Fax: +44-1695-526-01 |
| FRANCE Courbevoie Phone: +33-1-4904-9000 Fax: +33-1-4904-9010 | RUSSIA Veliky Novgorod Phone: +7-8162-55-7898 Fax: +7-8162-55-7921 | UNITED STATES Massachusetts Phone: +1-508-586-4600 Fax: +1-508-427-8971 |
| GERMANY Ratingen Phone: +49-2102-108-0 Fax: +49-2102-108-111 | Moscow Phone: +7 495-585-1276 Fax: +7 495-585-1279 | Corpus Christi, Texas Phone: +1-361-881-8182 Fax: +1-361-881-8246 |
| INDIA Mumbai Phone: +91-22-8354790 Fax: +91-22-8354791 | SAUDI ARABIA Phone: +966-3-341-0278 Fax: +966-3-341-7624 | Deer Park, Texas Phone: +1-281-884-1000 Fax: +1-281-884-1010 |
| New Delhi Phone: +91-11-2-6164175 Fax: +91-11-5-1659635 | SINGAPORE Phone: +65-6861-6100 Fax: +65-6861-7172 | Houston, Texas Phone: +1-281-671-1640 Fax: +1-281-671-1735 |

www.geoilandgas.com/valves

*Denotes a trademark of the General Electric Company.

Other company names and product names used in this document are the registered trademarks or trademarks of their respective owners.

© 2016 General Electric Company. All rights reserved.

GEA32749A

10/2016

